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ABSTRACT

This paper describes the use of a writing strategy, Cognitive Strategy Instruction in Writing (CSIW), to improve expository writing and student responsibility of four seventh-graders with learning disabilities. CSIW emphasizes the need for students to take responsibility for their own writing performance and to scaffold one another's writing development. The year-long study incorporated collaborative writing by the students within a special education resource room setting. Theoretical discussion examines social constructivism and the roles of student and teacher in constructivist dialogue. Principles of the CSIW model are explained, including: effective writing is a holistic enterprise; immature writers benefit from writing apprenticeships in which the teacher models the thinking of effective underwriting; and students collaborate to write for authentic purposes and real audiences. Also explained are the CSIW instructional program and the taping of all instructional sequences and writing-related student conversations during the year for later analysis. Pretest and posttest analysis revealed impressive growth in the students' writing skills on the taught and practiced essay structure though not for an untaught and unpracticed expository structure. Many examples of classroom dialogue illustrate teacher modeling, teacher scaffolding, and classroom conversation showing peer support and the transfer of responsibility to the students. Appended are sample CSIW "think sheets." (Contains 39 references.) (DB)

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Taking Charge: Adolescents with Learning Disabilities Assume Responsibility for Their Own Writing

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Paper presented at the Annual Convention of

the Council for Exceptional Children

Charlotte, North Carolina

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Abstract

Adolescents with learning disabilities (LD) often find expository writing among the most difficult academic skills to master. These students typically experience a great deal of failure with writing and become dependent upon others - mainly the teacher - for ideas and "quality control." This dependence on external sources of knowledge hinders the development of higher-level cognitive skills such as those required of effective writers. This study examined how a powerful writing strategy, Cognitive Strategy Instruction in Writing (CSIW), helped enable a group of seventh-graders with LD to take over responsibility for their own writing performance and to scaffold one another's writing development. Extensive teacher modeling and scaffolding and a set of structuring think-sheets enabled these students to move beyond the "learned helplessness" so common among adolescents with learning disabilities; they came to see themselves as genuine writers and to employ the writing process as a tool for effective written expression.

Expository writing represents one of the most daunting of all the academic tasks demanded of students with learning disabilities (LD) (Graham, Harris, MacArthur, & Schwartz, 1991; Englert, 1990b). The complexities of written expression and the visible nature of written products make writing a tangible threat to children with language processing problems. By junior high, many adolescents with LD have developed a special aversion to writing, which is compounded by the more complex writing tasks and greater independence demanded of students at the secondary level.

Increasingly, students with learning disabilities are receiving instruction in regular education and are expected to perform accordingly. Nevertheless, many of these students find it very difficult to create a personal vision of effective writing or to see themselves as genuine writers. As such, they often become dependent upon external sources - mainly the teacher - for topics, ideas, and "quality control." The complexity of secondary-level writing tasks and the lifelong need of adults to compose coherent written text make this an important area of investigation for researchers in special education.

By engaging 4 seventh-grade students in a year-long collaborative writing project, this study hoped to generate a broader understanding of how adolescents with learning disabilities perceive themselves as writers and how their perceptions develop alongside their writing skills. One indication of their emerging expertise would be the extent to which they could take over responsibility for their own writing development, as well as scaffold the writing of their peers. Central to the study, therefore, was the dialogue that emerged as students worked collaboratively on expository writing tasks.

Collaborative Writing

As a study incorporating collaborative writing, this investigation has elements in common with the recent work of Colette Daiute (Daiute, 1986; Daiute & Dalton, 1993) and Helen Dale (1994). In the earlier study of collaborative

writing among fourth-graders, Daiute found that co-authors were able to learn about elements of the writing process from one another. Daiute also gained insights into the thinking process of inexperienced writers in a way not possible through other means of observation or analysis, most notably in the areas of planning, plot development, editing, rhetorical structure, and inner dialoguing. Daiute recommended continued exploration of collaborative writing, suggesting that the technique should yield more knowledge about the complexities of collaboration and its potential as an effective writing intervention.

Daiute and Dalton (1993) examined the impact of collaboration on the story writing of low-achieving third-graders. They found that novice writers can serve as masters by contributing their individual strengths to the collaborations, with the role of expert shifting throughout the collaborations, and by taking on teacher-like modeling roles. The children engaged in highly interactive and responsive composing, instruction, and evaluation. The authors note, however, that "the teacher's expertise may be required when children's expertises with a specific kind of task or in a specific domain are exhausted or when the potential for exchange is limited" (Diaute & Dalton, p. 327).

In outlining the framework of her study, Dale (1994) noted that increasing interest in collaborative writing has not yet yielded many investigations of how these groups function. She noted the need for further research in coauthoring interactions, particularly at the secondary level. Dale studied the discourse of three ninth-grade coauthoring triads - a model group, a typical group, and a problem group - in an effort to discern the factors that affected the relative success of their collaborations on three essays. She found that the model group took more conversational turns, engaging in active expression of their ideas, elaboration of their inner speech, and modification of their thinking.

The current study sought to extend the collaborative writing research into the special education resource room. Among its primary aims was to examine the extent to which the resource room can become a writing community in which students with severe writing disabilities accept responsibility for their own and each other's writing development.

Theoretical Framework: Social Constructivism

Social constructivism provides the theoretical framework for this study. Social constructivism is predicated on the assumption that people come to know and understand the world through social interaction. Learners construct meaning through the cyclical integration of prior knowledge with new socially mediated knowledge. Vygotsky (1978) posited that language and thought are interdependent. The language of social interaction (especially speech) "goes underground" (Vygotsky, 1986, p. 33) and turns into the inner speech that becomes thought.

Vygotsky also emphasized that through interaction with an adult or more capable peer, a child's performance can exceed his or her actual development. Within the context of schooling, this means that students can perform elements of holistic tasks in advance of actual competence. This study examines how the teacher's modeling and scaffolding, combined with ongoing peer collaborations, enabled students to take over responsibility for their own writing achievement.

Vygotsky's contemporary, M.M. Bakhtin, asserted that dialogue is intrinsic to the human condition and that language is fundamentally dialogical (Bakhtin, 1981). For Bakhtin, "voices always exist in a social milieu; there is no such thing as a voice that exists in total isolation from other voices" (Wertsch, 1991, pp. 51-52). The social nature of writing (Bruffee, 1984; Hunter, 1989; Porter, 1986) underlies the building of a classroom community of writers. Students become "reacculturated" into the larger community of writers by sharing in its "common property, its knowledge" (Bruffee, 1995, p. 15). Englert and Palincsar (1991) note that students' written texts are

> historically situated and informed by the larger literacy community. Effective instructional methods should foster opportunities for students to participate in a classroom discourse about texts (e.g., author's chair, public sharing of books, peer conferencing, collaborative writing, dialogue journals), and experimental methods also must account for and document the sociohistorical contexts in which children write (e.g., case study analysis, single subject research, ethnographic research). (p. 226)

New Roles for Student and Teacher

Constructivist dialogue seeks to transfer responsibility for learning from the "mentor" to the "apprentice." Helping students become responsible for their own learning requires a restructuring of traditional student and teacher roles.

Students can no longer rely on the teacher as the exclusive seat of learning. Rather, they must learn to accept themselves and their peers as legitimate sources of knowledge. Teachers must see themselves as mentors rather than "imparters of knowledge." Their challenge is to use students' existing knowledge as the foundation upon which to build new understandings of higher-level tasks such as expository writing.

Student Role

Students in traditional classroom settings often see their role as that of passively receiving information imparted by the teacher. Classroom collaboration, however, requires significant changes in the role of the student. MacGregor (1990, pp. 25-26), though writing about collaborative college settings, notes the following shifts in role with which all students must grapple:

- from listener, observer, and note taker to active problem solver, contributor, and discussant;
- from a private presence in the classroom to a public one;
- from competition with peers to collaborative work with them;
- from responsibilities and self-definition associated with learning independently to those associated with learning interdependently; and
- from seeing teachers and texts as the sole sources of authority and knowledge to seeing peers, oneself, and the thinking of the community as additional and important sources of authority and knowledge.

To the extent that their collaborations were effective, the students in this study demonstrated each of these shifts away from the traditional student role to a more active, generative one.

For students, an important factor in dialogue is the opportunity to interact with peers. Human life is inherently social, and learning is profoundly affected by the social context in which it occurs. Moreover, at times students gain considerably more from discussions with their peers than with their teachers (Barnes & Todd, 1995): "To depend upon the teacher's presentation alone is to expect the learners to arrive without having traveled" (p. 17). Nevertheless, "such interactions (with peers), focused on academic tasks and part of the

discourse acceptable in official air time, are rare" (Cazden, 1988, p. 124).

Traditional classroom instruction can serve to reinforce the "learned helplessness" so prevalent among adolescents with learning problems. Peer interactions mediate the asymmetry inherent in the teacher-dominated classroom.

> Children never give directions to teachers, and rarely ask questions except for procedures and permissions. The only context in which they can reverse interactional roles with the same intellectual content, giving directions as well as following them, and asking questions as well as answering them, is with their peers. (Cazden, 1986, p. 449)

Teacher Role

The restructured teacher's role includes facilitating a collaborative spirit within the classroom. Just as the student's role changes from a passive recipient to an active learner and generator of knowledge, so too does the teacher's role change in collaborative classrooms. As the teacher gives up some control of public events in the classroom, he/she takes on the roles of a resource and facilitator (Barnes & Todd, 1995). For such a transition to be effective, it is important for the teacher to prepare students for participation in class discussion with rules such as the following (Barnes & Todd, 1995, p. 101, citing Slavin, 1990, who quotes Smith, Johnson, & Johnson, 1981) and to model their application:

- Be critical of ideas not people.
- Remember that we are all in this together.
- Encourage everyone to participate.
- Listen to everyone's ideas, even if you don't agree with them.
- Restate what someone said if it is not clear.
- Try to understand both sides of an issue.
- First bring out all the ideas, then put them together.

Cazden (1988) notes that the teacher takes on the role of a model, serving as "an important link between interactions with an expert (teacher) and interactions among peers" (p. 148). A second role is that of occasional participant in the class discussions. These teacher roles differ widely from that of "transmitter of knowledge" in the traditional *teacher initiation - student*

response - teacher evaluation (IRE) or *initiative - response - feedback* (IRF) models often criticized in the education literature (see, for example, Watson & Young, 1986; Cazden, 1988).

Roles in a dialogical relation shift back and forth over time. Teaching and learning moments cannot be clearly demarcated, and authority is ascribed by others within an ongoing relation. As such, an important aspect of the current study is examining the extent to which students were able to take on teacher-like roles such as scaffolding and providing supportive encouragement.

Classroom dialogue involving students and teacher often finds the teacher engaged in *scaffolding*, wherein the teacher temporarily controls elements of the task that are beyond the capacity of the student; ultimately, this initial support may enable the student to complete the task more competently than would have been possible without assistance (Wood, Bruner, & Ross, 1976; Gee, 1992; Palincsar & Brown, 1984). Scaffolding allows students "to participate in the mature task from the very beginning" (Cazden, 1988, p. 107), while the teacher gives over more and more responsibility to the learner (Freedman, 1994, 1993; Palincsar & Brown, 1984). Moreover, dialogue offers the teacher valuable opportunities to provide students with scaffolded instruction (Palincsar, 1986). Scaffolding is central to Vygotsky's (1978) concept of the *zone of proximal development*, wherein the novice is able to perform tasks beyond his/her independent problem solving under the guidance of an adult or more capable peers.

Scaffolding during writing instruction allows the teacher to model for students the writing strategies and thought processes of accomplished writers (Englert, 1992; Englert, Raphael, Anderson, Anthony, & Stevens, 1991; Englert, 1990b). While demonstrating the various elements of the writing process (i.e., planning, organizing, writing, editing, and revising), the teacher makes mental acts explicit by incorporating "think-alouds" (Hunter, 1989; Duffy & Roehler, 1987; Raphael & Englert, 1990; Englert & Raphael, 1989; Englert, 1990b; Englert, Raphael, Anderson, Anthony, & Stevens, 1991) throughout the demonstration. The classroom environment thus nurtures communication that enables students to become active participants in their own learning (Watson & Young, 1986).

Scaffolding is especially critical for students with learning disabilities,

who typically have difficulty generating ideas (Graham, Harris, MacArthur, & Schwartz, 1991a; Englert & Raphael, 1988; Englert, Raphael, Anderson, Anthony, Fear, & Gregg, 1988; Graham, MacArthur, Schwartz, & Page-Voth, 1992; MacArthur, Schwartz, & Graham, 1991) and organizing text (Englert & Raphael, 1988; MacArthur, Schwartz, & Graham, 1991; Graham, Harris, MacArthur, & Schwartz, 1991b) and who possess limited metacognitive knowledge about the writing process (Englert & Raphael, 1988).

Cognitive Strategy Instruction in Writing

Cognitive Strategy Instruction in Writing (CSIW) provided the instructional model within which the collaborative structure of this study was built. CSIW is a discursive process that, as described by Englert (1992), embodies three guiding principles for expository composition. First, effective writing is a holistic enterprise in which writers engage in the processes and strategies related to planning, organizing, writing, editing, and revising. Second, immature writers benefit from writing apprenticeships in which the teacher models the thinking and inner talk that underlies effective writing. The teacher scaffolds students' use of specific writing strategies through ongoing teacher-student and student-student dialogues. Third, students learn to appreciate the social nature of the writing experience by writing for authentic purposes and real audiences and by collaborating with each other throughout the writing process.

Student thinking is supported by a series of think-sheets (see Appendices A-G) that provide students with structure at each stage of the expository writing process. The pre-writing stage employs two think-sheets. The *plan* think-sheet assists students in identifying the purpose and audience of their composition and in brainstorming ideas for the paper. The teacher in this study has added a step in which students expand their brainstorms by reconsidering each idea in their lists in light of their purpose and audience; additional details that would be helpful to the reader are added to the brainstorm. The *organization* think-sheet provides a structure for grouping the brainstormed ideas into categories; each expository text structure (i.e., essay, explanation, comparison/contrast) has its own *organization* think-sheet. The teacher in this study has added an intermediate step that employs color-coding brainstormed ideas that "belong together" as a

means of facilitating category grouping on the *organization* think-sheet. Once the ideas have been organized, students write the first draft of their papers.

The editing stage provides students with an opportunity not only to scrutinize their own first drafts, but also to submit this draft to peer editors for their review and suggestions. This stage employs the *edit* think-sheet, which is completed by the author, and the *editor* think-sheet, which is completed by the peer editor.

Finally, the *revise* think-sheet helps student authors to synthesize suggestions generated on their own *edit* think-sheets and *editor* think-sheets received from peers. Once authors have completed their *revise* think-sheets, they are ready to make their revisions. The entire writing process is facilitated by composing and revising on the computer. Students in this study used word processing programs for all their writing, with the exception of the pretest and posttest papers.

Method

Research Setting

The setting for this study was a rural consolidated school in the upper Midwest. Situated 25 miles from a medium-sized metropolitan city, the school district serves students from four small towns and the surrounding farms. The school district prides itself on the high achievement of its students on standardized tests.

The resource room program is divided into elementary (K-6) and secondary (7-12) classrooms, with services provided at the K-3, 4-6, and 7-12 levels. The program model includes options for direct instruction in basic academic skill areas (i.e., reading, math, and written language) and supplementary assistance in all academic areas. Secondary students may receive as much as two class periods of direct instruction and one study hall per day, or as little as one study hall per day. Another locally housed program option, the self-contained class with integration (SCI), offers special education assistance to students who require more than 2-3 periods per day. SCI services are provided at the K-6 and 7-12 levels. The school day is divided into eight periods of 46 minutes each.

Participants

Participants in the study included 4 seventh-grade students (2 boys and 2 girls). All students qualified by state and local criteria for special education placement and all experienced extreme difficulty with expository writing. All students participating in the study were scheduled into the resource room during the same class period, and they were the only students assigned during that period. Mike, Cindy, and Andy (pseudonyms) were assigned for direct instruction in English. Kris (pseudonym) attended regular English class, but the upper-elementary resource room teacher felt that her writing skills were very weak and that she would benefit from Cognitive Strategy Instruction in Writing (CSIW). Mike, Cindy, and Kris were enrolled in the resource program. Andy was enrolled in the SCI program; he was one of several students "shared" by the SCI and resource room teachers in an effort to maximize individualization in their Individual Educational Plans (IEP's).

The students were all 12 or 13 years of age. Their most recent scores on the Wechsler Intelligence Scale for Children (Wechsler, 1974) and their most recent broad written language scores on the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1989) are listed in Table 1.

TABLE 1
I.Q. and Achievement Test Scores of Student Participants

	Wechsler Intelligence Scale for Children			Woodcock-Johnson Psycho-Educational Battery (Broad Written Language)	
	Verbal I.Q.	Performance I.Q.	Full Scale I.Q.	Grade-level Score	Standard Score
Andy	96	111	102	2.9	70
Kris	86	91	87	6.8	96
Cindy	105	123	114	5.2	88
Mike	94	87	89	4.5	83

Mike was a friendly, cooperative student who throughout the school year demonstrated a keen commitment to performing well in school. Mike was very conscientious about completing his school work and tried hard to do his best work. His efforts received school-wide commendation when the junior high faculty named

him 7th grade Student of the Month in May. Cindy was a pleasant, quiet girl who, like Mike, was very conscientious about completing her schoolwork and adjusted well to seventh-grade work. Andy was a very interesting student. He was friendly and imaginative, with a twinkle in his eye and a keen interest in anything mechanical. Nevertheless, he had a great deal of difficulty in school due to frequently poor task completion, and his writing skills were very weak. Andy, like Mike, had been retained in first grade. Kris was an enthusiastic girl, at times quiet but often exuberant. She was very cooperative and did quite well in her seventh-grade schoolwork.

Instruction

Instruction included mini-units on descriptive and narrative writing in September and October, as well as mini-units on writing introductions and conclusions that were infused while the students wrote their first extended essays. In mid-November the teacher began modeling the Cognitive Strategy Instruction in Writing (CSIW) "expert" essay text structure by using the entire process to write a paper of his own, emphasizing through think-alouds the thought processes of an experienced writer. He chose a topic with which the students were familiar: the concession stand fundraising project that was run with the resource and SCI students. After the teacher modeled each step in the writing process (planning, organizing, writing, editing, and revising), the students completed that same step with papers of their own on topics of their choice. The teacher emphasized that the first paper would be written very slowly and carefully and that the students would be expected to write their second paper, a research paper, with minimal assistance from the teacher. Students wrote pretest papers in September and posttest papers in May in order to gauge writing progress; these papers included both the taught/practiced "expert" essay structure and the untaught/unpracticed explanation structure.

In the early part of the school year, writing instruction occupied part or all of two to three class periods per week. Other instructional time was devoted primarily to reading and study skills instruction. However, due to numerous lengthy delays that impeded the progress of the research project, writing instruction occupied proportionately more class time as the school year continued.

Student Collaborations

As mentioned above, the students wrote two papers during the course of the year; both were collaborative efforts. They were asked to form two partnership pairs; each student would be the primary author of one paper and the secondary author of another. The primary author would take the lead in topic selection and would have final say in all matters, but the secondary author would be expected to contribute extensively. Co-authors would collaborate at all stages of the writing process; much of the data collected during the year centered on the interactions that emerged during those collaborations. Kris and Cindy chose to work together, as did Mike and Andy.

The first paper was an essay on a topic with which the student was very familiar; its purpose was to inform a reader less familiar with the topic. Cindy wrote about her horses, Andy wrote about bull riding, Kris wrote about a recent family trip to California, and Mike wrote about rodeo roping. The second paper added a research dimension to the writing process; students were to choose a topic in which they were interested and about which they wanted to learn more. Cindy wrote about the figure skater Scott Hamilton, and Kris wrote about Olympic wrestling. Andy and Mike chose to co-author a single paper on Australian animals.

During January, February, and March, the students and teacher worked on composing the first paper; the schedule was slowed considerably by school cancellations due to inclement weather and by Cindy's frequent absenteeism. Then students used the Internet, reference CD's, and the CSIW strategy to prepare their research papers. Incorporating research added an investigatorial dimension to the students' work and served to reinforce the natural integration of reading and writing. Work on the research papers continued literally until the very end of the school year - May 29.

Data Collection and Analysis

Pretest and Posttest Papers

Pretest papers written in September and posttest papers written in May were analyzed in order to gather evidence of writing improvement. Papers were written on topics with which the students were familiar, and students were given as much time as necessary to complete the papers (although the posttest papers were

somewhat rushed due to time constraints at the end of the school year). Students wrote papers requiring both the taught/practiced "expert" essay structure and the untaught/unpracticed explanation structure in an effort to determine the extent to which learning would transfer across text structures.

Pretest and posttest papers were scored using rubrics developed by Englert and her colleagues (Englert, 1988, 1990a). Scoring criteria focused on key elements of each of the two text structures. Papers received ratings for the following elements:

1. A holistic rating of overall quality.

2. A primary trait score that represented (a) for explanation papers, a total of scores for introduction, steps in the explanation, use of key words, and organization; and (b) for "expert" papers, a total of scores for introduction, definition of categories, development within categories (depth), development across categories (breadth), use of key words, and organization.

3. Number of words.

4. A reader sensitivity score representing a total of scores for drawing in the reader in the introduction, clearly expressing the purpose of the paper, targeting the audience, and establishing an author voice.

Interrater reliability between two raters was calculated on 25% of the papers. Reliability was calculated on primary trait and reader sensitivity scores by dividing the number of agreements by the sum of agreements plus disagreements. Reliability for the explanation papers was 85.71% for pretest primary trait score, 100% for pretest reader sensitivity score, 100% for posttest primary trait score, and 100% for posttest reader sensitivity score. Reliability for the expert papers was 100% for pretest primary trait score, 80% for pretest reader sensitivity score, 93.75% for posttest primary trait score, and 90% for posttest reader sensitivity score.

Classroom Conversations

The teacher tape recorded all instructional sequences and writing-related student conversations during the year and documented his own observations and reflections in fieldnotes. Close analysis of instructional sequences and student conversations focused on four key points in time during the school year (see Table

2); these points in time were chosen because of their important junctures in the school year and in the writing process. In order to help avoid sampling bias, the points in time were chosen prior to analysis of the corresponding transcripts. Data from the four key points in time were triangulated with data collected throughout the school year.

TABLE 2
Four Key Points in Time for Close Analysis

Date(s)	Event(s)
January 9	Teacher modeling of color-coding brainstormed ideas into categories
January 30-February 1	Student brainstorming of descriptive/narrative paragraphs, organizing main sections of first paper
March 28-29	Collaborative revision of first paper
May 7	Writing first draft of second paper (research paper

Since the research called for an examination of the teacher's talk during instruction, close analysis began with the January 9 class session in which the teacher modeled the process of color-coding a brainstorm in order to begin forming categories of ideas. Next, analysis focused on the three class sessions of January 30 - February 1 in which the students worked on brainstorming descriptive/narrative paragraphs and organizing the main sections of their first papers. This set of transcripts would reveal how students employed the crucial prewriting skills of brainstorming ideas and organizing categories of ideas.

Thirdly, examination focused on transcripts of the March 28 and 29 class sessions, during which the students worked on revising their first papers. These sessions centered on collaborative student interactions intended to improve the quality of their first drafts. Finally, analysis shifted to the May 7 class session in which the students worked on writing the first drafts of their second papers, the research papers. This session would reveal the extent to which the students had internalized the collaboration and writing concepts that had developed over the course of the year. The session also would reveal whether and

how Mike and Andy, who had chosen to write their research paper together, would collaborate during the composing task.

Transcripts of instructional sessions and student collaborations were coded, and numerical totals of codes were tabulated. To ensure that the analysis would be driven by the data and would be as inductive as possible, individual student and teacher comments were coded first. In this study, conversations formed the unit of analysis, but unitizing occurred at the individual comment level. Five iterations of the coding scheme emerged from transcripts of the four key points in time and other transcripts from throughout the school year.

Participant comments were coded to represent the intent of the comment; intent was inferred from the content of the comment, the context within which it was made, and/or the reaction of other participants. Comments were coded only if their intent was evident from content, context, and/or reaction(s). The codes themselves highlighted how a specific comment (a) related to the progress of the writing task at hand, (b) served as a window to a student's thinking about the writing task at hand, and/or (c) served as an indicator of a participant's collaborative role.

Categories emerged from interactions between participants and took the form of analytical assertions supported by the data. Eight assertions emerged from the coded transcripts; these assertions were compared with the original research questions and found to be quite similar in focus. The analytical assertions then became the focus of the ensuing analysis. Three of the eight assertions are of particular interest to this article:

- The teacher's modeling emphasized anticipating future student difficulties, thinking aloud, framing instruction, involving students, demonstrating, and reviewing.
- The teacher's scaffolding comprised a balance of comments and questions that emphasized the concepts of text structure and reader sensitivity.
- Students accepted transfer of responsibility for their writing from the teacher to themselves and demonstrated the ability to

scaffold one another's writing development.

Findings

Pretests/Posttests

Pretest and posttest analysis revealed impressive growth in the students' writing skills (see Table 3) on the taught and practiced "expert" essay structure. Little improvement resulted, however, for the untaught and unpracticed explanation structure, implying that transfer from one text structure to another without practice was not automatic for these students. Andy's "expert" posttest results stand in stark contrast to those of the other three students. The posttest papers were written at the very end of the school year, and Andy, whose behavior was characterized by impulsivity and distractibility, had simply run out of gas. Despite the lack of evidence of improvement in his posttest papers, the papers Andy wrote during the school year and his comments throughout the process indicate considerable growth in his understanding and construction of effective prose.

TABLE 3

Pretest and Posttest Results

Expert Text Structure

	Holistic		Prim. Trait Total		Read. Sens. Total		Words	
	pre	post	pre	post	pre	post	pre	post
	(Possible: 3)		(Possible: 18)		(Possible: 12)			
Cindy	1	3	7	16	2	5	97	284
Mike	1	3	8	17	5	10	152	396
Andy	2	1*	13	9*	5	0*	144	53*
Kris	2	3	13	15	3	9	119	283

*Unrepresentative due to end-of-year motivational factors

Explanation Text Structure

	Holistic		Prim. Trait Total		Read. Sens. Total		Words	
	pre	post	pre	post	pre	post	pre	post
	(Possible: 3)		(Possible: 12)		(Possible: 12)			
Cindy	1	1	6	6	3	1	63	96
Mike	1	2	6	6	1	5	112	286
Andy	1	1*	4	3*	1	1*	44	24*
Kris	2	2	8	6	2	6	99	118

*Unrepresentative due to end-of-year motivational factors

Classroom Conversations: The Teacher

Insights into the generally impressive results of the pretest/posttest analysis can be drawn from the primary focus of this article - the capacity of the students to accept responsibility for their own writing achievement. Transcript analysis revealed that the students had internalized the thinking processes modeled by the teacher and were able to incorporate these processes not only in their own writing, but also in scaffolding the writing of their partners.

Modeling

The teacher's modeling emphasized anticipating future student difficulties, thinking aloud, framing instruction, involving students, demonstrating, and reviewing. The students almost immediately became involved in his modeling of the writing process, and students then employed the thought process modeled by the teacher in their own writing.

Only one of the four key points in time (the January 9 session) focused on structured teacher modeling. As such, the various techniques employed in modeling occurred almost exclusively during the first of the four key points in time, as reflected in the coding tabulations in Table 4.

TABLE 4
Teacher Modeling Across
Four Key Points in Time (Key Code Tabulations)

	MODEL COLOR-CODING	ORGANIZING FIRST PAPER		REVISING FIRST PAPER		WRITING SECOND PAPER	
		Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy
Modeling	19	1	0	0	0	1	0
Anticipate Writing Difficulty	10	0	0	0	0	0	0
Anticipate Procedural Difficulty	9	0	0	0	0	0	0
Thinking Aloud	12	0	0	0	0	1	0
Framing Lesson or Discussion	2	0	0	0	0	0	0

Prior to January 9, the teacher had chosen a topic for his demonstration paper and had modeled the brainstorming of ideas related to that topic. The teacher's topic was one with which the students were familiar - the resource room

concession stand fundraising project in which the students all were involved. As such, the students almost immediately began contributing to the teacher's brainstorm, evidence that they already were internalizing the thought processes the teacher was modeling.

After brainstorming his topic, the teacher modeled an additional step - the expansion of the brainstorm. He reminded the students that as authors they were writing for an audience less knowledgeable about their topics. Then he demonstrated the process by which each idea on the brainstorm list was reviewed in light of the author's purpose and audience. The author asks him/herself, "Is there anything else about this idea that the audience would want to know?" Each idea that arose from this reflection was then added to the end of the brainstorm. The teacher and student authors thus were validated as legitimate sources of knowledge that others may not possess.

The January 9 class session focused on the teacher's modeling of the color-coding of his brainstormed ideas. Color-coding involved using felt-tip markers to place dots of the same color in front of all ideas on the brainstorm list that seemed to belong together. Color-coding represented the first step in organizing the paper.

The teacher's modeling relied heavily on think-alouds in order to make his thinking visible to the students. For example, early in the lesson he located the first idea in his brainstorm, identified it with a blue dot, and employed think-alouds in his search through the list for related ideas (NOTE: ideas included within quotes represent entries read directly off the brainstorm):

> T: I'm lookin' for things that have to do with the kinds of students involved (in the concession stand fundraising project). O.K., "officers." I, I think I'll make that a blue dot. That has to do with the students. Uh, "monster cookies, popcorn balls, puppy chow," no, "juice, fruit, popcorn, how we involve students in events." No, that's something that's for the teachers. Well, that might go; I'll go blue with that. "How we involve the students in the events," yeah. "Field trips, charitable donations, fun, list places that we've gone," no, "approval, benefits and skills," no, "money, advertising, posters, signs, P.A. announcements, purpose of the project, nachos," nothin' about students here. "Working groups," that has to do with students...

Table 5 reflects the key code tabulations from the January 9 class session. The teacher made it a point to periodically check for understanding as he

proceeded with the modeling. Since so much of his instructional focus rested on the modeling, he wanted to make absolutely sure that the students were following him. He had purposely chosen a topic for his demonstration paper with which the students were familiar (the concession stand fundraising project), and he regularly solicited their participation. Many of their comments and questions resulted from his comprehension checks or anticipation of potential future difficulties, as in the following excerpt:

T: ...Uh, "we decided at the beginning" - think I should put that in there? - "to make it junior high events only"? O.K., Now, one thing, I may change some of these later. I may decide later that one of these ideas should go in a different group, but right for now
Kris: [Then what do you do?
T: Just to get me started, this is the way I'm gonna kinda work it.
Andy: [Then you're just workin' with the other color.

After the teacher asked the students if he was putting an idea in the proper group and mentioned that he might make adjustments later, Kris asked for clarification ("Then what do you do?"); Andy then stepped in with a response ("Then you're workin' with another color.").

TABLE 5
Modeling Color-Coding (Key Code Tabulations)

Teacher					
Writing Support	5	Anticipate Writing Difficulty	10	Equity	15
Check Understanding	14	Thinking Aloud	12	Instruction	5
Directing Attention	9	Review	5	Respond to Student	10
Modeling	19			Confirmation	4
Students					
Seek Clarification	10	Equity	10	Confirmation	10
Offer Clarification	2	Elaborate other	6	Complete thought	2
Support Writing	2	In-Context Interruption	4	Out-of-Context Interruption	2

On six occasions, students offered elaborations of someone else's comment or idea. For example, in the following excerpt, Andy indicates that he thinks a specific detail (Ms. Jackson's participation in the concession stand project)

should be included in the group of ideas dealing with the students. After the teacher explains why he disagrees, Andy elaborates on the teacher's thinking by proposing a category in which the detail *would* belong:

Andy: Ms. Jackson'd be in there.

T: Yeah, she was involved in it at the beginning. It says
[
Andy: No, but you could put her in there.
T: Not with the students. She'll go in a different group.
Andy: Oh, like "teachers" and stuff?
[
T: Yeah. Exactly...

Andy's ability to correct his own misconception and to create a category title into which "Ms. Jackson" would belong demonstrated that he was internalizing the organizing process the teacher was modeling.

It was very important that the students were made to feel comfortable asking questions and offering comments if they were to establish successful collaborative relationships. Otherwise, important contributions might go unexpressed and serious misconceptions might go unchallenged. For example, during the following exchange, in which the teacher is looking for ideas about the *students* involved the concession stand project, Mike's misconception about how an idea should be color-coded is addressed both by Andy and by the teacher:

T: ...I'm just goin' down through all the ideas here. "Near the gym and the football field"? no, "make products"? no,
Mike: Yeah, they can, seventh and eighth graders can (inaudible).
[
T: Yeah, they do make products, but it doesn't have to do with the, the kinds of students
[
Andy: The products and stuff.
T: that are involved.
[
Mike: Yeah. I know what you mean.

The teacher was seeking ideas from his brainstorm that related to the kinds of students who participated in the concession stand project. Mike thought the idea "make products" should be included; when the teacher disagreed, Andy noted that the idea would more clearly fit in a category dealing with the *products* made for the concession stand. Mike's final comment signaled his agreement with this

logic.

As the class period came to a close, Kris spontaneously launched into a think-aloud of her own as she began to apply the teacher's modeling to her own brainstorm. She quickly received a supportive comment from Andy:

Kris: Most of mine'll be at its own. Well, no. These two will go together.
T: Yeah. Try not to leave too many things all by themselves.
[
Andy: Like, put (inaudible) and put them two together with the (inaudible).
[
Kris: Yeah. These two could go together 'cause they're on the bridge.
T: O.K.
Kris: Oh, before the bridge (inaudible).
T: Try not to leave too many things all by themselves. Try to create groups. That's the idea.
Kris: 'Cause, like, "homeless" and "bus" go together 'cause there's homeless people on the bus.

Even though the teacher had not yet demonstrated the consolidation of small groups of ideas into larger groupings, Andy and Kris appeared already to have applied his earlier comments to Kris's brainstorm. Interestingly, Andy's supportive comments about Kris's "bridge" ideas ("Like, put...and put them two together...") seemed to help her to recognize the connection between "homeless" and "bus." At this very early stage of the investigation, the students already were demonstrating the ability to collaborate effectively and to scaffold one another's efforts.

As noted above, the teacher took pains to draw the students into his modeling. Later, when he read the first draft of his model paper aloud, the students were very attentive and said that this helped them figure out what to do with their own papers. They also seemed to be acutely aware of their own earlier contributions to the teacher's brainstorm as he read the "final product." They were very complimentary about his paper, perhaps in their own way sharing in the credit.

Teacher Scaffolding

The purpose of the teacher's scaffolding was to guide a student who was having difficulty to an entry point that would allow the writing process to move forward as seamlessly as possible. Scaffolding generally was reserved for issues involving expository text structure (e.g., organizing categories, adequately developing categories) or reader sensitivity (e.g., making writing interesting,

providing adequate explanations).

Table 6 reflects the various ways in which teacher scaffolding occurred during the four key points in time. In addition to codes subsumed by the analytical assertion (i.e., scaffolding comments, scaffolding questions, structural issues), the table includes codes representing other utterances that played a role in guiding the students' thinking or responding to perceived student needs.

TABLE 6
Teacher Scaffolding (Key Code Tabulations)

	MODEL COLOR-CODING	ORGANIZING FIRST PAPER		REVISING FIRST PAPER		WRITING SECOND PAPER	
		Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy
Scaffolding Question	0	11	17	0	0	1	11
Scaffolding Comment	0	16	19	0	0	1	14
Direct Thinking to Structural Issue	0	0	1	0	0	0	12
Direct Thinking to an Idea	0	0	0	0	0	0	3
Direct Thinking to a Resource	0	2	8	3	6	2	1
Direct Attention	9	2	5	0	0	3	6
Anticipate Writing Difficulty	10	0	0	0	0	0	0
Anticipate Procedural Difficulty	9	0	0	0	0	0	0
Instruction	5	0	0	2	1	0	5
Check on Things	2	5	5	0	0	1	3
Seek Clarification	1	2	2	0	1	0	15
Offer Clarification	2	0	0	0	0	0	1
Offer Help with an Idea	0	0	0	0	0	0	2
Offer Procedural Help	0	1	0	0	1	1	2
Elaborate	0	0	1	0	2	1	0
Question an Idea	0	0	0	0	0	1	0
Review	5	2	11	0	0	0	1
Repeat an Idea	0	2	1	0	0	0	0
Suggesting	0	0	2	0	0	1	0
Respond to Expressed Student Need/Question	10	3	8	3	9	3	10
Frame Lesson/Discussion	2	0	0	0	0	0	0

During the January 9 modeling session, scaffolding primarily took the form of anticipating future difficulties. In subsequent class sessions, the teacher's scaffolding was evenly divided between questions and comments. He preferred to

use scaffolding *questions* whenever possible because they require the student to do most of the cognitive work, hopefully engendering a greater feeling of ownership. Sometimes, however, time constraints or the level of a student's difficulty warranted the more direct approach of a scaffolding comment.

During the January 30-February 1 class sessions, the students worked on organizing their first papers and incorporating description and narration to build interest. Twenty-seven instances of teacher scaffolding emerged from the teacher's exchanges with Kris and Cindy. Sixteen of these involved scaffolding comments and 11 involved scaffolding questions. In large part, he was helping Kris to resolve difficulties that were hindering the progress of her work. Teacher scaffolding in the following excerpt, for example, relies on both questions (identified by "T(Q)") and comments (identified by "T(C)"), to help Kris recognize possible ways of handling single-item categories of details about her family's recent trip to California:

T: You know, when you have groups, you might see if there's a way to
Cindy: Group 'em all together?
Kris: How?
T(Q): Well, what are your really small groups? What's one?
Kris: "Alcatraz," "trolley car," there's, there's, ummm, "motel."
T(Q): O.K., do they, do they all have anything in common?
Kris: I suppose. I don't know.
T(Q): Are they, like, are they, are they all in San Francisco? No?
Kris: No.
T: O.K., that won't work. We can't use that then.
Kris: 'Cause, like, those are in San-, Sacramento, that's in Eureka.
T(C): No, I mean the small groups. The, the
Kris: That. Well, see
T: This and this.
Kris: Well, there's two motels. One's in Sacramento and one's in San Francisco. That's in San Francisco, and that, San Francisco, and that's just all the weather, I guess.
T(Q): O.K. So, how many groups do you have there?
Kris: One, two, three.
T(C): Six or seven? Well, what you might want to be
[
Kris: Yeah.
T: thinking about is, for example, Alcatraz.
Kris: That was by Fisherman's Wharf.
[
T: Can you, O.K.
Kris: Maybe put that there?
T(Q): Yeah, maybe, or can you, do you have enough to say about Alcatraz that it could be a whole section of your paper, or would it be better to include it in with something else? That's what you have to ask yourself.

Toward the end of the session, the teacher tried to help Cindy expand on her idea about toys for her horses with both scaffolding questions and scaffolding comments:

T: How are you coming along?
Cindy: Oh, I'm kinda stumped.
T(Q): O.K., you're trying to describe the toys that the dogs, that the horses use?
Cindy: That they play with.
T(C): O.K., well, then, you, what you probably want to do, and, you know, maybe Kris can help you, is to try to, sometimes it helps even to just close your eyes and sort of get a picture in your mind of what they look like or how they're used.
Cindy: We have one toy already. A stall ball.
T(C): [And try, try to come up with specific words that would help capture the image.
Cindy: (Inaudible.)
T: O.K.
Cindy: It can be kicked around. Starlight (inaudible). She beats it up.

A key factor in assuming responsibility for their learning was the students' capacity to see themselves as legitimate sources of knowledge. As such, the teacher occasionally acknowledged that a student author had knowledge of his/her topic that he did not:

T: Try not to leave too many things all by themselves. Try to create groups. That's the idea.
Kris: 'Cause, like, "homeless" and "bus" go together 'cause there's homeless people on the bus.
T: You're the one that has to decide that. You know the background
Kris: [I think so.
T: and I don't...

Acknowledging the students' expertise in their topics, and the teacher's lack of same, enabled the teacher to take on the role of a naive reader. This facilitated his scaffolding by making the effort more collaborative and less teacher-directed.

The May 7 transcript, in which the students worked on writing the first drafts of their research papers, reveals both further evidence of teacher scaffolding and the extent to which the students had learned to grapple with complex writing issues. In order to help save time, the teacher spent much of the class period typing for Mike and Andy as they dictated their ideas to him. In the following excerpt, the boys are having difficulty deciding how to divide some of

their material into paragraphs:

T: Now, you guys have a lot of material here about koalas.
Mike: [Oh.
T: Is that too much for one paragraph?
Andy: Yeah.
Mike: Well, I was gonna say somethin' about their
Andy: [Now, let's do about their body weight and stuff.
.
.
.
T: ...is that some stuff about behavior?
Mike: No, it's about how to get the food.
T: Oh, O.K. Well,
Mike: and their, like,
Andy: Yeah, behavior. They climb trees.
Mike: [(Inaudible) to get the food.
T: Do you have enough about behavior for one paragraph?
Mike: No.
Andy: No. Then, we could put
Mike: Well, would behavior
Andy: [their behavior
Mike: be about their young and stuff?
Andy: their behavior
T: Could be.
Andy: and their young?
T: Yeah, yeah, the, the way they rear their young. That would be behavior. I'm just thinking, you've got too much there for one paragraph.
Mike: Well, could we put,
T: You've got a lot of stuff.
Mike: "They, they are vegetarians" (brief pause) in that same thing?
T: No, yeah, where would you want that?
Mike: ['Cause then, 'cause then we wouldn't have to put any more in that. We could start a new paragraph.

This excerpt reveals a good deal of high-level collaborative thinking. The teacher's scaffolding questions ("Is that too much for one paragraph?"; "...is that some stuff about behavior?"; "Do you have enough about behavior for one paragraph?"; "...where would you want that?") and scaffolding comments ("Now, you guys have a lot of material here about koalas"; "I'm just thinking, you've got too much there for one paragraph"; "You've got a lot of stuff") appeared to help Andy and Mike to identify which material belonged together. However, the teacher did not make this organizational decision; Mike did it himself, and Andy concurred.

Summary

Both modeling and scaffolding afforded the teacher important opportunities to influence the students' performance while allowing them to retain primary responsibility for their own learning. Teacher modeling emphasized demonstrating the thinking that undergirds effective writing and anticipating future difficulties that the students might encounter. Scaffolding included both questions and comments designed to help keep the students' writing efforts moving along smoothly.

Classroom Conversations: The Students

For students to become independent writers and to generalize their learning to new settings, they must be able to take responsibility for their own learning. Therefore, this study sought to examine the extent to which the students internalized the thinking and the writing techniques that the teacher had modeled, as well as their ability to scaffold one another's writing development.

Table 7 summarizes the key codes that inform the issue of transfer of responsibility. As noted earlier, the teacher relied heavily on thinking aloud during his modeling. The code tabulations indicate that thinking aloud played a prominent role in the students' writing work through the revision stage. By the time they started writing their second paper, however, their thinking apparently had congealed enough that thinking aloud had become less critical.

TABLE 7
Transfer of Responsibility (Key Code Tabulations)

* Potentially Disconfirming

	ORGANIZING FIRST PAPER		REVISING FIRST PAPER		WRITING SECOND PAPER	
	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy
Thinking Aloud	20	15	11	3	0	0
Admit Difficulty with Structure	7	0	0	0	0	0
Taking/Giving Ownership of Idea	0	1	0	0	0	7
Seek Clarification	2	4	1	5	0	20
Offer Clarification	0	5	2	4	1	13
Seek Evaluation from Peer	4	0	3	1	3	0
Seek Evaluation from Teacher	0	0	0	0	0	0
Seek Idea from Peer	1	10	6	4	0	0
Offer Help with Idea	0	0	9	2	0	0
Question Own Idea	0	4	0	0	1	2
Question Other's Idea	2	5	0	1	0	0
Admit Difficulty with Own Idea	7	4	1	0	0	3
Admit Difficulty with Other's Idea	0	0	1	0	0	3
Admit Memory Difficulty	0	0	1	0	6	0
* In-Context Interruption	0	10	1	7	3	1
* Out-of-Context Interruption	6	18	1	3	4	3
* Teacher Comment - Time Management	2	5	1	2	0	1
* Teacher Comment - Behavior Mgt.	0	3	0	3	0	1

Seeking and offering clarification, seeking ideas and evaluations from others, and admitting difficulty serve as additional indicators of the students' efforts to take command of their own learning. These codes appeared less frequently and less consistently, but they did seem to play an important role in specific situations and for specific pairs of students. It is noteworthy that students occasionally sought evaluation of their work from a peer, but never from the teacher. This can be attributed, at least in part, to the teacher's frequent reminders that the students were expected to rely as much as possible on each other for assistance and support.

The potentially disconfirming codes further illuminate the types of interactions that evolved during the school year. Kris and Cindy worked very independently throughout the year and required few reminders to stay on task; their interruptions were generally brief and seldom interfered substantially with their work. Andy and Mike, on the other hand, had a more difficult time staying

on task. While the teacher found it necessary to spend more time with them than with Cindy and Kris, they generally were able to get back to work and to accomplish the tasks at hand once they had been redirected. The relative scarcity of teacher comments about time and behavior management indicates that distractions and interruptions rarely reached crisis levels.

Contributions During Teacher Modeling

As we saw have seen, a good deal of student participation occurred during the teacher's January 9 modeling lesson. Andy and Kris made specific contributions that helped move things along. We have noted that Kris quickly began emulating the thinking aloud that the teacher had been modeling. She also demonstrated an awareness of audience sensitivity, a key element in successful writing. In the following excerpt from the January 9 session, Kris raises the question of how the teacher's audience (other teachers interested in starting concession stand fundraising projects) might react to a portion of the paper the teacher was beginning to organize. The group was discussing in which group to include a detail about one of the teachers who initially had been involved in the concession stand fundraising project but who no longer participated:

Kris: I have a question, though.
T: Yup.
Kris: W-, like, you have "Ms. Jackson at the beginning"?
T: Right.
Kris: Like, if it was somebody else's school, for somebody else's school, would you put that in there?
T: Well, I'll have to decide when I write this.
Andy: [You'd put, "Some teachers may drop out," or somethin' like that.
T: Yeah, yeah, you might.
Kris: Mmm, O.K.
T: Yeah, 'cause when I - that's a good question and that was a good suggestion - when I start to write this, I may not write it exactly the way I have it here. I'm, I would probably write it more like what Andy just said because, like you say, they're not gonna to know who Ms. Jackson is.

Andy's comment, "Some teachers may drop out," addressed Kris's question by suggesting wording that would be appropriate for the audience (other teachers).

Kris's insightful question above led to a very helpful elaboration from Andy, in which he suggested wording that would address Kris's concern. Andy provided helpful clarifications and elaborations several times during the class

period. Early in the lesson, for example, Kris asked another question that Andy answered much better than the teacher did:

T: ...Now, one thing, I may change some of these later. I may decide later that one of these ideas should go in a different group, but right for now,
Kris: [Then what do you do?
T: Just to get me started, this is the way I'm gonna kinda work it.
Andy: [Then you're just workin' with the other color.
T: I'll show ya later what you do if you're gonna change one later.
Kris: O.K.

As mentioned earlier, Andy also helped clear up Mike's misconception about where the idea "make products" should be grouped:

T: ...I'm just goin' through the ideas here. "Near the gym and the football field"? no, "make products"? no,
Mike: Yeah, they can, seventh and eighth graders can (inaudible).
T: [Yeah, they do make products, but it doesn't have to do with the, the kinds of students
Andy: [The products and stuff.
T: that are involved.

These two excerpts feature a student naturally stepping into the discourse and helping the teacher teach. Thus, at a very early stage in the investigation, students stepped beyond the traditional student role and became genuine collaborators.

Peer Support During Prewriting and Composing

As work continued on the first major paper, the teacher continued to draw the students into his modeling of CSIW. For example, as he composed his own paper about the concession stand fundraising project, he modeled how to write a descriptive paragraph - in this case, about baking in the home economics room. Below are excerpts from the session in which he modeled the brainstorming of descriptive words and phrases, and during which he received help from all four students at one time or another:

Andy: "Be sure to eat first."
Mike: (Chuckles) And I have this (inaudible).
T: [O.K., that's good. "Be sure to eat first." I like that. What kind of a word could I use for the, the smell?

Mike: "Odor?"
Andy: "Aroma?"
Mike: (Inaudible.)
[
T: "Aroma." Ah!
Mike: What?
T: "Aroma." What kind of aroma? Uh,
Andy: "Nasty." (Chuckles.)
T: It's not nasty.
Mike: No, it's a fantastic aroma.
T: "Fantastic aroma." Good.

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T: Well, I don't know, if you haven't made monster cookies. Any of you made monster (cookies)?
[
Cindy: I have.
T: Did, did you get your hands into the batter,
Cindy: No.
T: where you've got to get in there, and you get all that
Andy: That stuff's
Mike: "Oatmeal?"
Andy: "Thick!"
T: Yeah, you've got the oatmeal and the peanut butter and all that stuff, and you're trying to mix it together with your hands. What would be a good word to describe?
Andy: "Messy?"
Cindy: "Mooshy?"
T: Hmm?
Cindy: "Mooshy?"

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T: Is that going to be enough for a decent paragraph? "Be sure to eat first," "fantastic aroma," "gooey" to describe the popcorn balls, (inaudible), "mooshy," "caked on hands." That would be, these would both be for the cookies. How about puppy chow? What could I, what would be a good word that might be useful in describing making puppy chow?
Andy: Owww.
Kris: "Tastes good."
T: "Tastes good."
Andy: "Powdery."
T: "Powdery?" O.K.
Mike: Oh, I got to shake the bag, opened it up. Pfffff!
T: Oh, and the powder flies.
Mike: Yeah.

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.
.

Mike: "Powder, powder explodes out of the bag."
T: "Powder explodes out of the bag." Good. O.K.

The teacher incorporated many of these images in the descriptive paragraph

he wrote and shared with the students. They seemed genuinely pleased to see that he had used so many of their ideas in his paragraph.

The excerpt above illustrates the enthusiasm with which the students shared ideas when requested to do so by the teacher. Exchanges such as the one that follows demonstrate that the students quickly internalized the process of both seeking and offering assistance to a fellow author. In the following excerpt Cindy is instrumental in developing a name for one of Kris's categories:

Kris: Which is my t-, my, my topic? Oh, I know what I'll call it. Never mind.
Cindy: (Sighs.) Oh, boy.
Kris: What is "oh, boy?" Can you help me come up with a name for, um, Fisherman's Wharf, the wax museum, a boat museum,
Cindy: "Museums?"
Kris: um, sourdough bread, sea lions,
Cindy: Mmm, "sights?"
Kris: O.K., hey! Good idea, jeez!...

A vivid example of both Cindy's contributions to Kris's writing and Kris's exuberant reaction occurred on February 9 as the girls worked on descriptive paragraphs for their first papers:

Kris: "Tourist." (Brief pause). It's gettin' to me. "Tourist spot." (Brief pause.) O.K., thanks. "A major tourist spot." Uh, "A wax museu-, the wax museum comes to life." Hey! I made a sentence!
Cindy: [That's a good one!
Kris: Thanks! O.K. "The"
Cindy: (Inaudible.) You got that one on your own.
Kris: "Wax" (brief pause) "museum." Ooo! Oh, I can do that, like, "A wax mu-, the wax museum comes to life."
Cindy: Yeah!
Kris: [Is that what I said?
(22-second pause.)
Kris: Ooo! I'm proud of myself!

It would appear that Kris's enthusiasm had become infectious. Cindy's enthusiastic responses ("That's a good one!", "Yeah!") and her pat on the back ("You got that one on your own.") hearken to Kris's numerous expressions of excitement in both this and other conversations. As the conversation continues, Kris shares her enthusiasm with the teacher:

Kris: Look at this sentence I made: "The wax museum comes to life."
T: Oh, that's good.
Kris: I just thought of it.
T: I like that. Yeah...
Kris: Yay!

After the teacher leaves, the girls co-construct additional description of the wax museum:

Kris: Um, "strange"? "Looks like real human flesh."
Cindy: "The people look real." "The statues look real." How does that sound?
Kris: (Inaudible.)
Cindy: "The statues in the museum look like real people."
Kris: Your flesh is just sk-, skin, isn't it? "Flesh."
Cindy: (Inaudible.)
Kris: Oh! "The s-"
Cindy: "The statues of the (inaudible) look like real people." It doesn't (inaudible).
Kris: Well, "The wax museum comes to life." That's what I was k-, it kind of
Cindy: [(Inaudible.)
Kris: They're kind of the same, I think. But, uh,
Cindy: "The wax museum"
Kris: ["The wax, the wax on the"
Cindy: "Statues"
Kris: "statues"
Cindy: "Looks like flesh"?
Kris: Yes. Yes! I
?: (Inaudible.)
Cindy: You like that one?
Kris: I like that one.

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Kris: Woa! Am I, oh, jeez, I'm glad I asked you to help me!

Cindy's original suggestions ("The people look real"; "The statues in the museum look like real people") led to Kris's mention of *flesh* and her more abstract contribution: "The museum comes to life." Finally, together the girls constructed the final image, "The wax on the statues looks like flesh." The exchange above bears a remarkable resemblance to the earlier session in which the students all helped generate descriptive words and phrases for the teacher's paragraph on baking in the home economics room (e.g., "fantastic aroma," "mooshy," "powder explodes out of the bag") and suggests that the students were internalizing the tought processes modeled by the teacher.

Interestingly, even after the girls had collaborated on the very effective images noted above, Kris ultimately exercised her discretion as an author in changing the text in her final draft. Here is the section of her paper dealing with the wax museum:

> ...The Wax Museum was one of the places in Fisherman's Warf (sic). It was so realistic. If you turned a corner not paying attention you would think someone was in the glass case. Some of the statues were John Lennon, OJ (sic) Simpson, and an Egyptian guy...

Evidence abounds of Cindy's ability to scaffold Kris' writing performance. Some of Cindy's assistance was structural in nature, as in the following excerpt from the February 9 writing session:

Kris: ...Um, so, then, should I put, do we have to have a couple paragraphs? Do we?
Cindy: Hmm? We need different things for different paragraphs.
Kris: Because, like, I c-, I can make a, now should I go down there and put some sights? 'Cause at that I should have, already I should have about those two, that together, then from here to here, and then this and that, shouldn't I? Well, we can fix it up later, then, I guess.
Cindy: You should start a new paragraph (inaudible).
Kris: Uh, should I?
Cindy: How many sentences do you have there?
Kris: One, two, three, four, five, six, seven, (brief pause) nine.
Cindy: Yeah.
Kris: I would say so.
(Cindy chuckles.)
Kris: O.K.

On other occasions, as we have seen, Cindy's scaffolding took the form of leading Kris to improved wording. In the following excerpt, Cindy suggests an idea that leads Kris to a very descriptive image:

Kris: Wait, O.K., I have one. "The tomato trucks are really cool." Should I put period and then put, "When they," yeah, yeah, yeah! Never mind.

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Kris: Wait, O.K. I'm gonna put, "When they go by,"
Cindy: "They drop tomatoes all over the road"?
Kris: "tomatoes will *fly* across the road." Yup, O.K.

At different times during the year, Mike scaffolded Andy's efforts to generate details, refine wording, and organize his ideas. In the following excerpt, taken from the February 9 writing session, he directs Andy's attention to his *organization* think-sheet, then temporarily takes over responsibility in order to help Andy get underway with his paper on bull riding:

Mike: ...O.K., what do you need help on?
Andy: (Inaudible.) You know,
[
Mike: Naa! What do you need help on, on that thing?!?
Andy: These sentences. I can't
Mike: Well, which one are you doing? Which web?

Andy: The sentences.
Mike: Was it "exercises"?
Andy: Not supposed to be.
Mike: What else did you put already?
(Intercom interruption.)
Andy: Mmm, (inaudible.)
Mike: What'd you put?
Andy: "You should be physically fit. That determines your willpower and determination to ride bulls."
Mike: And you should put, "You have to get fairly stretched out, (brief pause) or you'll crack your (brief pause) open, or crack your (brief pause) open."
Andy: (Chuckles.) What?
Mike: (Chuckles.) "Probably crack your head open" or (inaudible), "so you should get"
Andy: Oh, O.K.

Since Mike and Andy shared many of the same interests, Mike was able to help Andy clarify his thinking, as in the following excerpt about proper spur placement during bull riding:

Andy: "The 45 degrees in your spur is for," what would that be for, Mike?
Mike: What?
Andy: (Inaudible) the 45-degree slant in your spurs.
Mike: Ninety-degree angle.
Andy: But
Mike: What?
Andy: I can't think what the reason is. You don't have to go like this the whole time. You can just go like this.
Mike: You can keep your feet straighter.
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.
Andy: "It's easier to ride that way."

It is noteworthy here that Andy asked Mike for advice and did not quibble when Mike corrected him on the degree of slant of the spurs (although it remained "45-degree slant" in Andy's paper). Then, after Mike suggested the reason for the slant ("You can keep your feet straighter."), Andy refined the wording ("It's easier to ride that way.").

While Andy's distractibility tended to be among his most visible behavior characteristics, transcripts reveal that over the course of the school year he developed a keen sense of perception regarding matters of organization and expression. In the following excerpt, from the February 20 writing session, Andy helps the teacher scaffold Mike's attempt to organize his paragraphs and separate them on the computer:

Mike: ...I can't, I don't know where to put paragraphs, between the big thing, part of something?
T: Well, why don't you guys look that over and tell me where you think you should start a new paragraph, and then I'll show you how to do it.
Andy: Now, let's put a paragraph right there.
T: Well, read it over.
Mike: [Where? (Inaudible.)
T: The purpose, you change paragraphs when you start talking about something different. O.K.?
(Brief pause.)
Mike: O.K., here's a (inaudible).
T: O.K., why don't you get your cursor in here. Click, click in there and then just use this. I think you'll find this a little bit easier to use.
Mike: [Oh, O.K. (Brief pause.) There's a, there's a top. There's one paragraph.
T: See, you should have, you've got four sections here. So that should be at least
Andy: [You've got four paragraphs.
T: four paragraphs.
Mike: Oh.
T: Four sections to the paper is what you said.
Andy: [So find out where you started with this one, and find out where you started with that one.

Andy took the teacher's suggestions ("You change paragraphs when you start talking about something different"; "You've got four sections here") and applied them to Mike's paper with comments of his own ("You've got four paragraphs"; "So find out where you started with this one, and find out where you started with that one").

Of the four students, Mike seemed to have the most trouble accepting his status as a legitimate source of knowledge. For example, during the January 30 class session, Mike insisted that he had no suitable ideas in his brainstorm for adding description or narration. The teacher reviewed the concepts of descriptive and narrative writing and eventually offered suggestions. Mike remained resistant for several minutes, insisting that he had no suitable ideas to work with:

Mike: None of mine are narrative or description.
T: You're looking for places where you can either tell a story,
Mike: Your (inaudible).
T: a story that might be interesting to the reader, something that happened to you or, uh, tell how a certain idea in your
Mike: [But none of 'em did happen.
T: paper is, uh, built around a story of something that happens.

Mike: There's none of 'em, like. No, no, no, no, no, no, no, no, no, no. None of 'em.

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Mike: Nope, nope. (Brief pause.) No, (inaudible). All of 'em are just, like, things, like "bucket" and stuff like that. Like, all of 'em are, like, just, like, "the pickup trailer," stuff like that.
T: Well, do any of 'em deal with something that you have to do?
Mike: No.
T: O.K., that you have to do, maybe, in a certain way?
Andy: Pickup, back up the truck.
[
Mike: Well, yeah, you're not going to go head first and that.
T: You're looking for things that,
Andy: I've done it.
T: ideas that talk about something that has to be done, probably in a certain way. And both of you have topics where I would think there'd be things that need to be done in a certain way, in a certain order.
[
Mike: Well, but they know about all that.
T: Yeah, but remember, you're writing to somebody who doesn't know this.
Mike: Well, they have to. Gee, it'd be just (brief pause). They would!
T: Now, keep in mind your audience is somebody who doesn't really know much about this.
Mike: They know how to back up.

T: Well, maybe that's not one you want to use. Maybe there's something else.
[
Andy: That was just a suggestion, Mike!
T: Yeah.
Mike: Sorry, Andy.

Whether Andy's suggestion about "backing up the truck" was made in good faith or meant to be provocative is unclear. It *is* clear, however, that the suggestion fueled Mike's resistance. Lack of awareness of reader knowledge and needs (e.g., "Well, but they know about all that...Well, they have to.") recurred occasionally during the early stages of the study. Mike had a very difficult time accepting the possibility that many people would not know as much as he did about certain topics (roping, for instance). Nevertheless, he finally settled down and eventually suggested that his narrative paragraph could explain the steps that partners follow in roping.

When the teacher asked Mike later about his occasional resistance, he said he sometimes got frustrated when he had an idea how something should go, and the teacher said it should be done differently: "...I think it's the right way and

then it's really not, so then I get kinda argumental (sic)." He added that his other teachers may have been teaching correctly but, with larger classes, often did not have the chance to actually *show* him proper writing techniques.

Over time Mike was able to overcome his resistance to writing, and he came to accept his own potential as a writer. In the following excerpt, Andy helps Mike with the conclusion to his first paper:

Andy: "You are ready to go roping now with your partner."
Mike: Could I put that?
Andy: (Inaudible.)
Mike: What?
Andy: "I think you're ready to"
Mike: "Start roping"?
Andy: Yeah. "I think you are ready to start roping with your partner and buy my next book."
(Mike laughs.)
Andy: "You"
Mike: O.K., what?
Andy: "You are ready" (Typing begins in the background.)
Mike: I'm ready.
Andy: "You (typing sounds) are (typing sounds) ready (typing sounds) to (typing sounds) start (typing sounds) roping." (Inaudible) space.

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Mike: (Chuckles.) "(Inaudible) buy my next book." No, I won't put that.

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Mike: I'm gonna put something else. I got something better. (Typing sounds follow.)

Mike's last comment indicates that, despite Andy's obvious assistance in getting him started, he was not relying entirely on Andy's ideas. Moreover, Andy's help seems to have unleashed what Mike considered to be even better ideas. Mike's conclusion eventually read as follows:

> Now if you want to start roping you should find a partner and you should go to roping class for practice and advice. If you're a city person or country person and you have no experience with roping or horses or nobody in your family has experience I would would not (sic) recommend this to you. I would not recommend this to you because you won't know much about horses and how to work with the horse to get the steer.

This conclusion, with its explicit attention to reader sensitivity, is especially interesting in light of Mike's earlier difficulty accepting the notion that many readers would know much less about his topic than he. Mike appears to have

accepted his status as an "expert" in the area of team roping.

The CSIW framework, combined with teacher modeling and peer scaffolding, seemed to allow the students to redirect their energies from previously problematic structural issues to more creative thought processes. The conclusion to Andy's first paper on bull riding reveals the quality of which he was capable when his energies were no longer consumed with procedural concerns. In the following excerpt, Andy's conclusion unfolds through think-alouds and conversation with Mike.

Andy: "Are you crazy enough to strap your hand to a 2,000-pound package of hamburger?"
Mike: *What?*
Andy: "Are you crazy enough to strap your hand to a 2,000-pound package of hamburger?"
Mike: Yeah, and let it drop off a building. *Yeahhh!* I wouldn't mind that, though, if it was soft.
Andy: No, bull - hamburger?
Mike (chuckles): Oh.
[
Andy: Two thousand-pound package of hamburger?
(Discussion of what it would be like to jump into a huge, uncooked hamburger.)

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Andy: How d'ya spell "shish-kabob"? Oops, just a minute.
Mike: Shish-kabob.
T: I think it's
Andy: Just a minute.
T: I'll write it on the, I'll write it on the board (inaudible).
Andy: Write it nice and dark.

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Andy: "Cowboy shish-kabob." Is that one or two words?
T: *"Cowboy shish-kabob!"* Sounds like a good, uh, image.
(Andy asks Mike for some help reading "shish-kabob" off the board. Mike razzes him about needing glasses.)

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Andy: How's this sound: "Is this what you call fun? Getting a tour of hell on a 2,000-pound package of hamburger, and you better get out of the way before you're turned into a cowboy shish-kabob."
Mike: (Inaudible.)
Andy: I think that sounds kinda good!

Andy expresses justifiable pride in a truly remarkable conclusion that reveals the kind of writing possible for a student with a severe writing disability whose

energies can be applied creatively.

Collaborations During Revising

On March 22, Andy, Mike and the teacher helped Kris to rearrange some of the details in her first paper, which the teacher read aloud:

Andy: I think it was about the two paragraphs. They, like, went together or something.
Mike: Oh, yeah.
Andy: They're all mixed up.
(The teacher continues to read aloud.)
Mike: Thought that these, something, should go up here with this one or something. I don't know.
T: Is this all about Eureka?
Kris: I don't know, is it? Which one? (She begins reading aloud quietly.) The lumber company is with Eureka.
[
Andy: There we go! Lumber company! Where did that go in there for, or why?
[
Kris: Well, it's in Eureka.
Mike: Yeah, it's in Eureka.
Kris: The lumber company is in Eureka.

T: Place to end this (inaudible)?
[
Kris: But, yeah. And Alcatraz should be up with San Francisco.

Andy took the lead in clarifying that a section of Kris' paper included information that belonged in two separate sections ("I think it was about the two paragraphs. They, like, went together or something"; "They're all mixed up"; "There we go! Lumber company! Where did that go in there for, or why?"). By raising the issue of confusion within her paragraph, Andy helped Kris to determine a better organizational scheme. Mike joined the collaboration by reinforcing the perceptions of both Andy ("Thought that these, something, should go up here with this one or something.") and Kris ("Yeah, it's in Eureka."). Furthermore, helping Kris organize the section on Eureka led her to recognize a detail (Alcatraz) that belonged in the section on San Francisco. This excerpt provides an example of three students collaborating to improve a piece of writing - and learning from one another in the process.

The very suggestions for revision that served as the focus of the March 28-29 class sessions provided numerous scaffolds for writing improvement. An excellent example arose when Andy helped Mike respond to one of his (Andy's)

editing suggestions, which Andy connected conceptually to questions raised by one of the girls:

Mike: ...Then, you put, like, "Explain why you need, need a partner, or something, where, where you don't have to have a partner or something.
Andy: Yeah, except
Mike: Yeah, but you can't compete then if you don't.
Andy: Well, you should explain that then.
Mike: Yeah, O.K.
Andy: Like, "If you wanta compete professionally, you should have a full-time he-, heeler or header. And you, and the header ropes the head of the steer," 'cause didn't Cindy or Kris ask what that was?
Mike: Huh?
Andy: Didn't Kris or Cindy ask what a header or a heeler was? I thought so.
Mike: Yeah.

The fact that Mike and Andy had a collection of revision suggestions from which to work and were not forced to generate all their own ideas probably contributed to their higher level of independence. It would appear, moreover, that the boys also were gaining confidence in their abilities as writers. We have noted Andy's emerging success with creative expression and idea development. For his part, on several occasions Mike appeared to be quite interested in not only incorporating editors' suggestions into his paper, but also in selecting which revisions he would include.

Later, Mike again expressed his interest in addressing his editors' suggestions, as well as his right as an author to choose from among those suggestions, an assertion that the teacher supported:

Mike: I, I'm gonna first do this one.
T: O.K.
Mike: But I'm readin' it over 'cause I hafta find the place where (inaudible).
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Mike: Some of this stuff I don't want to do what they said.
T: That's your choice. Or, if, if, you know, you think there might be a better way than what they suggested, you could ask somebody else.

The three episodes of thinking aloud contained in this transcript (see Table 7) reveal that both Mike and Andy were thinking about structural elements of their papers. Although almost immediately interrupted by a question from Mike, Andy began musing over the wording of one of his paragraphs:

Andy: "The first time I"
Mike: By the way, what'd you mean by, "Explain about the stuff you get."

Later, the transcript captures Mike reviewing aloud the apparent wealth of suggestions from his editors: "O.K. Now they're gonna ask, 'Explain that.' Explain that next thing. Explain the next thing. So keep on doin' it."

Cindy and Kris once again worked efficiently and independently throughout the revising sessions of March 28-29. Much of the girls' conversation during revision centered on structural issues such as moving ideas within the paper, adding supporting details, adding categories, and incorporating reader sensitivity. Evidence of the girls' thinking of structural issues once again emerged through their think-alouds, of which there were 11 during these sessions (see Table 7). The following brief excerpt, for example, includes think-alouds revealing both Kris's concern for addressing issues raised by her editors and Cindy's awareness of organizational structure:

Cindy: Gee, I'm gonna change this before I go moving it.
Kris: Hmm. O.K., let's see. And I talked about (inaudible). The sights? Hmm. Do I need (inaudible)? (Typing sounds.) Somebody said I needed to look over the...
Cindy: Oops, made a boo-boo.

In the following excerpt, Cindy scaffolds Kris's effort to address one of her editors' suggestions:

Kris: O.K., Cindy?
Cindy: What?
Kris: I need help.
Cindy: Tell me what's wrong.
Kris: What?
Cindy: Tell me what you need. I'm double-spacing.
Kris: O.K. It says,
Cindy: (Inaudible.)
Kris: "How long was I there, how was the climate, and how long did it take me to get there?" So, I'm at the airport part. So, I don't know. I think it took us three hours to get there.
Cindy: Well, what time did you leave?
Kris: Early in the morning, I don't know.
Cindy: From the airport? Do you remember?
Kris: Seven, and we got there at 10.
Cindy: (Inaudible.)
Kris: Yeah. Three hours.

The final version of Kris's paper reflects her inclusion of details that grew out of this conversation ("...When we went to San Francisco we flew. We arrived at the airport at 10:00.").

In order to reinforce ownership of ideas, the teacher continued reminding the students of their responsibilities as writers. Early in the March 28 class session, Kris asked him if she had added an idea in the right place. After discussing the matter briefly, the teacher added, "You're the writer. Sometimes it helps to just write it down and then look it over later on and see if you like the way it sounds or not."

The Research Paper: Student Scaffolding Continues

A later conversation, recorded on May 3 as Cindy and Kris worked on organizing their research for their second paper, reveals the development of a lexicon that includes the terms "topic" and "category," as well as the ever-popular "group." The excerpt begins as Kris muses over where to include specific details in her brainstorm on the Olympics, receiving support from Cindy along the way:

Kris: O.K., all of this here, there, there, and there.
Cindy: Maybe you could figure out which ones sound better together like I did.
Kris: Like, this all goes together. These go, I bet all these go together for sure.
Cindy: Then the other ones.
Kris: This is about the track. That is, too, though. I, I don't, do you think I need to say that?
Cindy: What?
Kris: (Inaudible.)
Cindy: No.
Kris: Then, this is about, um, there to, this is all, this is a category, O.K.?
Cindy: Yeah.
Kris: I know that 'cause it talks about all the points and all that.
Cindy: Yeah, it could be a separate category.
Kris: O.K.

Both girls used the term "category" to represent the groupings of ideas in Kris's paper. As the conversation continues, "category" becomes interchangeable with the term "group":

Cindy: But then what (inaudible).
Kris: So, (brief pause) this is about, this is about it, too, how much it can hold. So that should go there, though, shouldn't it?
Cindy: Yeah.
Kris: No, not there. I mean
[
Cindy: No, not there, but the other one.
Kris: there. So, (brief pause) O.K., oh, wait, this goes with that. O.K. This is, O.K. Um,
Cindy: Except you should change the color of one of, one of the groups.
Kris: Yeah.

Cindy: The big one.
(Lengthy pause.)
Kris: Well, this can be a category - these three, I know for sure.

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Cindy: These all go together. You can make 'em a group (inaudible) if you have any other ones that color.
Kris: Oh, I changed, (brief pause) yeah, I should change this and that to a different color. Yeah. They'll be brown. (Brief pause.) O.K. See, these go together. This is a separate group. That's a separate group. I'm still tryin' to figure out that one and that one. That's about
Cindy: This should be a different color, too, 'cause it's about (brief pause) yeah.

Cindy continues to support Kris' efforts as the conversation turns to identifying category titles:

Kris: Now help me come up with a topic.
Cindy: (Inaudible.)
Kris: I need a topic for this.
Cindy: (Inaudible.)
Kris: I need to come up with a name for, like,
Cindy: The other groups?
Kris: Yeah.
Cindy: O.K., what group were the turquoise? (Brief pause.) O.K., I got an idea for this category.
Kris: Oh, goodie! That's what I need help on.
Cindy: Um, "things at night"? "Things to do with night"? Let's see, (inaudible)
Kris: Um, like, "things,"
Cindy: "that go on at the night."
Kris: "that go on." Or just, "things that are going on."
Cindy: "During the nighttime," 'cause you have 6:30 P.M., 7 P.M., (inaudible).
Kris: O.K.

Talking the possibilities over with Cindy enabled Kris to organize her ideas in a way she had been unable to do by herself. Both girls employed the terms "category" and "group" to help solidify their thinking. Once the groupings had been identified, Kris introduced the term "topic" to represent a label that would complete the grouping task.

While the girls' early conversations were characterized by more scaffolding from Cindy than from Kris, later in the school year Kris became better at sensing opportunities to suggest improvements to Cindy. In the following excerpt from the May 6 writing session, Kris shares a suggestion that helps Cindy to clarify her thinking about the introduction to her paper on figure skater Scott Hamilton:

Cindy: "...facts about his life. Would you like to hear about him?"
Kris: That's good. How about, when you put, "This paper is on Scott Hamilton,"

oh, yeah, that's fine. And then, you wanta know how to start it out, you probably already know, but start out, "Scott Hamilton was an ice skater, figure skater."
Cindy: "Figure skater."
Kris: "He was a figure skater in the blank, blank Olympics."
Cindy: I was thinkin' of starting with
Kris: Right? Does that sound, that'd sound good, that'd make it inter-
Cindy: [I was gonna start with what he did when he was little. (Inaudible.)
Kris: Oh, yeah, when he was in
Cindy: (Inaudible.)
Kris: Oh, yeah, that's
Cindy: Now he's a broadcaster.

Interestingly, the introduction that Cindy settled on included very few of these ideas: "This is a biography on Scott Hamilton's life. Here are some facts about his life. Read on if you want to know more about him." Although little of this conversation found its way into the final introduction, the dialogue appeared to have stimulated Cindy's thinking about various ways to introduce her paper.

The May 7 transcript reveals Andy and Mike organizing their research paper about Australian animals. In order to save time, the teacher was typing as the boys dictated their first draft. In the excerpt that follows, the boys set about explaining the important role eucalyptus leaves play for the koala. Their discussion demonstrates a keen interest in crafting the best possible sentence. Mike gets the sentence started, but Andy quickly takes the lead in refining the wording. Mike does not seem to feel like Andy has stolen his thunder (as probably would have been the case earlier in the year), but rather contributed his support:

Mike: ..."They get their"
T: [Now, you've got
Mike: "water from the leaves."
Andy: "They *also* get their water from the ee-calyptus leaves, or u-calyptus."
(Typing sounds.)
T: O.K.
Andy: "The eucalyptus leaves have a high"
Mike: [You get a good diet from 'em?
Andy: "high water content."
T: Do you wanna put that in here?
Mike: Just said that, though.
Andy: Yeah, but it doesn't say they have a *high*
Mike: [They get their water from 'em.
T: It's a good ide-, yeah, that makes sense. So, you wanta add that?

Andy: Yeah.
T: Um, let's see. "The eucalyptus leave, leaves have high water content" (pause)
Andy: "so koalas normally don't need to drink water, as they absorb enough water from"
T: Yikes! Wait a minute. (Chuckles.)
Andy: "the leaves."
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T: Good sentence! That's a world-class sentence, Andy.
Mike: (swoons): Ohhhhh!
T: Alright!
Mike: Professional (inaudible) are you now.
[
T: O.K.
Andy: I know.

Andy had crafted an exceptional sentence. The teacher's praise for his effort was eclipsed by Mike's, who bestowed it with professional status.

The conversation soon turned to the issue of establishing parameters for the next paragraph:

T: So,
Andy: Yeah, (inaudible).
T: is that some stuff about behavior?
Mike: No, it's about how to get the food.
T: Oh, O.K. Well,
Mike: and their, like,
Andy: Yeah, behavior. They climb trees.
[
Mike: (Inaudible) to get the food.
T: Do you have enough about behavior for one paragraph?
Mike: No.
Andy: No. Then, we could put
Mike: Well, would behavior
[
Andy: their behavior
Mike: be about their young and stuff?
Andy: their behavior
T: Could be.
Andy: and their young?
T: Yeah, yeah, the, the way they rear their young. That would be behavior. I'm just thinking, you've got too much there for one paragraph.

At first, both boys thought they had too little information for a paragraph about koala behavior - until Mike recognized that "behavior" would include raising the young. As the conversation continued, Mike devised a scheme for separating the next two paragraphs:

Mike: Well, could we put.

T: You've got a lot of stuff.
Mike: "They, they are vegetarians" (brief pause) in that same thing?
T: No, yeah, where would you want that?
[
Mike: 'Cause then, 'cause then we wouldn't have to put any more in that. We could start a new paragraph.
T: O.K, that would be the end of this para-
[
Andy: I'm an omnivore.
Mike: Yeah.
T: Oh, where, O.K., tell me where you wanta put that they're vegetarians. Tell me where that's gonna go in the paragraph.
Andy: Right before the ee-calyptus thing, where they're gettin' hooked on and drugged and stuff?
Mike: That, that would
[
T: Right here? O.K., right here? Where the cursor is?
(Pause.)
Andy: Mmm, (inaudible), yup.

Mike stepped in this time and took leadership. By placing information about the koala's vegetarianism in the previous paragraph, he insightfully placed eating habits in the same paragraph with water gathering. This allowed the next paragraph to deal more specifically with behavior. Andy seemed to recognize the wisdom of this decision before the teacher did. Moreover, the teacher's scaffolding did not appear to contribute to this organizational decision; Mike did it by himself, and Andy concurred. In this instance, Mike took charge of an organizational task, which previously more likely would have fallen to Andy. It seemed that Andy's organizational insights had rubbed off on Mike.

Andy took the lead in the next portion of the conversation, which focused on the wording of the sentence about the koala's vegetarianism:

T: O.K. What do you want, what do you want to say there?
Andy: "They are only vegetarians."
T: "They are only vegetarians"?
Mike: (Inaudible.)
Andy: What's that word, "fetus" or somethin' like that? "Fauna."
T: "Fauna."
Mike: What?
T: "Fauna" just means animals.
Andy: Yeah, see, "They're only vegetarian fauna."
T: Oh, "vegetarian *fauna*." My *word!* Andy,
Andy (chuckles): *What?*
T: I'm impressed with the language. That's good. Good.

This excerpt, only part of a much longer collaboration, illustrates the extent to which Mike and Andy had taken control of their writing development.

Their command of writing structure, modeled earlier by the teacher and supported by the CSIW think-sheets, had freed up their energies for more subtle refinements in writing quality.

Summary

It is clear that these seventh-graders were able to provide very helpful guidance for one another when difficulties in organization and expression arose. The result was enhanced interest in writing and remarkable improvement in writing skills. Interestingly, for different reasons (distractibility and a quiet nature) Andy and Cindy would appear to be uncertain candidates for consistently providing meaningful scaffolding to their peers; in reality, however, they each took the lead in their respective pairs in providing assistance and advice. It could be argued that in many instances the students went beyond "scaffolding" to simply providing specific ideas to their partners. It must be remembered, however, that these were, first of all, seventh-graders and, secondly, students who had experienced many years of failure and frustration with written expression. In light of all that, it seems that they took giant strides in developing a facility for scaffolding one another's writing.

Discussion

This investigation reveals the potential of a powerful metacognitive writing strategy and a mentoring teacher to help students with severe writing disabilities take over responsibility for their own writing achievement. Teacher modeling and scaffolding that develops during a writing apprenticeship provides students with the cognitive tools necessary to move beyond the "learned helplessness" so common among adolescents with learning disabilities. The collaborative dialogue in this study was internalized by the students (Vygotsky, 1978, 1986) and transformed their thinking about writing and their perceptions of themselves as writers.

Like students in previous studies within regular education (Diaute, 1986; Daiute & Dalton, 1993; Dale, 1994), these students with LD pushed one another's understanding of the writing process through collaborative problem-solving. This study reveals that learning communities can develop within the resource room that enable students to develop higher-level thinking processes within such complex domains as expository writing.

The teacher's role in supporting collaboration among students with learning disabilities is a complex one. The teacher must juggle the inclination to help with the desire to turn over as much responsibility as possible to the students. Facing seemingly endless demands for remediation of student difficulties, the special education teacher might be tempted to infer that collaboration would be too risky and too time-consuming for special education settings. The value of collaborative structures, however, lies in their potential to both capitalize on natural student urges to communicate and broaden the base of support available to these students.

As the findings of this study suggest, collaborative writing provides opportunities for students to "try out" their ideas on others, as well as to experience the support of peers as they develop their writing skills. Furthermore, collaborations intended to assist a partner force the mentoring student to re-examine his/her own thinking in a way that leads to refinements in his/her own writing processes. Certainly, the extra time spent employing collaborative structures pays off in enhanced student understanding and independence.

Collaborative dialogue among students with learning disabilities is an under-researched area. Much remains to be learned about the ways in which students collaboratively generate knowledge. With collaboration becoming increasingly important in the employment world, students with LD must learn to both share and receive ideas with a sense of purpose and grace. Equally important, through collaboration students gain enhanced understanding of their own thinking and a greater appreciation of their potential to generate meaningful knowledge.

The current study might be extended in a number of ways. Future investigations could focus on specific skills and capacities that are enhanced during collaborative work. Findings from such research would have important implications for classroom management and instructional design. Also, the role of the teacher in fostering meaningful collaboration might be explored further. Teachers would benefit from additional insights into effective ways of introducing and modeling collaborative problem-solving within special education and, for that

matter, regular education settings. "Guideposts" for identifying successful and unsuccessful interactions at various stages of the collaborative enterprise would be especially helpful.

The findings of the current study are applicable only within similar contexts. This study featured a single teacher-researcher working with 4 students with learning disabilities in a pull-out resource room setting. Future research could involve teachers in multiple sites working with larger, more heterogeneous groups of students. In light of the current emphasis on serving students with mild disabilities in regular classrooms, a particularly useful investigation would involve whole-class implementation of collaborative writing that involves students both with and without learning disabilities. Moreover, there is no reason to believe that findings similar to those outlined here would not accrue among general education students in regular classrooms.

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APPENDIX A

Plan Think-Sheet

PLAN THINK SHEET

Name _____ Date _____

TOPIC: _____

WHO: Who is my audience? _____

WHY: What is my purpose? _____

WHAT: What do I know about the topic? (Brainstorm)

_____

_____

_____

_____

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(Continue on another sheet, if necessary.)

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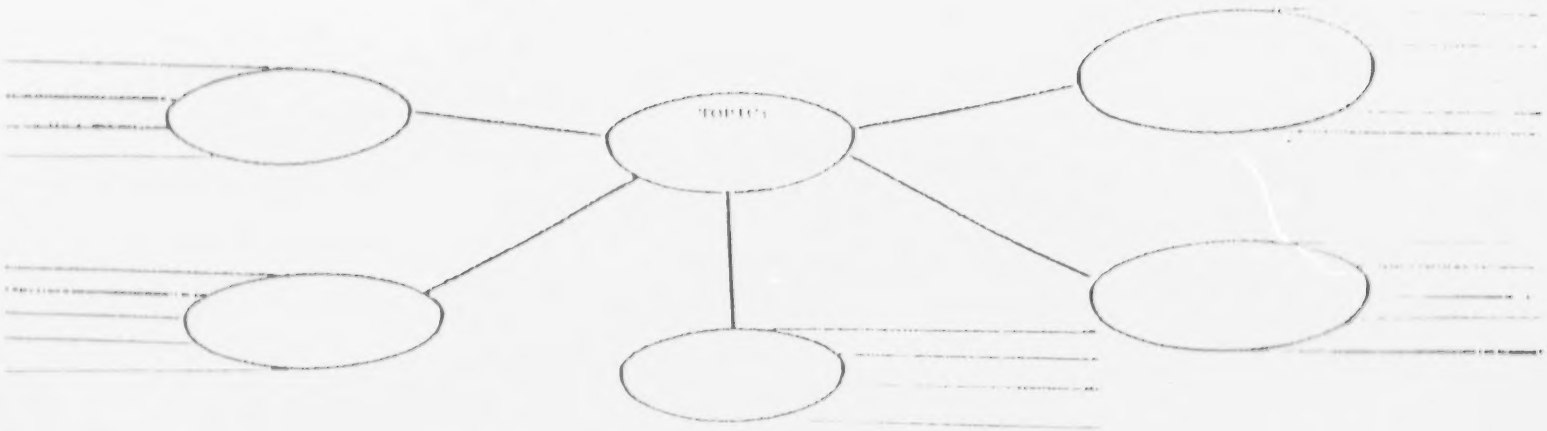
APPENDIX B

"Expert" Essay Organization Think-Sheet

Name Date

ORGANIZING



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APPENDIX C

Explanation Organization Think-Sheet

ORGANIZATION THINK-SHEET FOR EXPLANATION

WHAT IS BEING EXPLAINED?

WHO OR WHAT IS NEEDED?

SETTING?

WHAT ARE THE STEPS?

FIRST,

NEXT,

THIRD,

THEN,

FIFTH,

FINALLY,

APPENDIX D

Comparison/Contrast Organization Think-Sheet

Comparison/Contrast Organization Form

What is being compared/contrasted?

On what?

Alike?	Different?

On what?

Alike?	Different?

On what?

Alike?	Different?

APPENDIX E

Edit Think-Sheet

EDIT

_____ Date _____

Read To Check Your Information. Reread my paper.

What do I like best? (Put a * by the parts I like best)

What parts are not clear? (Put a ? by unclear parts)

Question Yourself to Check Organization. Did I

Tell what was being explained?	YES	sort of	NO
Use 2-3 categories?	YES	sort of	NO
Name each category clearly?	YES	sort of	NO
Give details to explain each category?	YES	sort of	NO
Use key words (first, second)	YES	sort of	NO
Make it interesting?	YES	sort of	NO

Plan Revision. (look back)

What parts do I want to change?

1. _____

2. _____

Write two or more questions for my editor.

1. _____

2. _____

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APPENDIX F

Editor Think-Sheet

EDITOR

Author's Name _____

Editor's Name _____ Date _____

Read to Check Information. Reread the paper.

What's the paper about?

_____

_____

What do you like best? (Put a * by the parts you like best.)

What parts are not clear? (Put a ? by unclear parts.)

Question Yourself to Check Organization. Did the author

Tell what was being explained?	YES	sort of	NO
Use 2-3 categories?	YES	sort of	NO
Name each category clearly?	YES	sort of	NO
Give details to explain each category?	YES	sort of	NO
Use keywords (first, second)	YES	sort of	NO
Make it interesting?	YES	sort of	NO

Plan Revision.

What two parts would you change?

1. _____

2. _____

One thing that would make it more interesting is _____

_____

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APPENDIX G

Revise Think-Sheet

REVISE

Name _____ Date _____

1. What suggestions did your editor give?

a. _____

b. _____

c. _____

d. _____

e. _____

Put a check next to the suggestions you will use.

2. How will you make your paper more interesting?

_____

_____

_____

3. Go back to your first paper and make your revisions.

Revision Symbols

Type	Symbol	Example
Add Words	^	The girl is my sister.
Take words out	———	The woman has cried to give
Change Order	~	He had gone home
Add Ideas here	↓	The dog is friendly.

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